

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
WALSDORFF et al.) Applications

Serial No. Not Assigned)

Filed:)

For: CATALYSTS FOR HETEROGENEOUSLY CATALYZED REACTIONS

PRELIMINARY AMENDMENT

Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Prior to examination, kindly amend the above-identified application as follows.

IN THE CLAIMS

Please amend the claims as shown in the attached sheets.

R E M A R K S

The claims have been amended to eliminate multiple dependency. No new matter has been added. A clean copy of the claims is attached.

Entry of the above amendment is respectfully solicited.

Respectfully submitted,

KEIL & WEINKAUF


Herbert B. Keil
Reg. No. 18,967

1101 Connecticut Ave., N.W.
Washington, D.C. 20036
(202)659-0100

AMENDED CLAIMS FOR OZ 51416

3. A catalyst for heterogeneously catalyzed reactions as claimed in claim 1 [either of claims 1 and 2], wherein the active components employed are from 1 to 15% by weight of copper, from 0.1 to 6% by weight of alkali metals, from 0 to 5% by weight of alkaline earth metals, rare-earth metals or mixtures thereof.

5. A process for the preparation of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 [one of claims 1 to 3], which comprises impregnating the δ - Al_2O_3 -containing support with salts of copper, alkali metals and, if desired, alkaline earth metals, rare-earth metals or mixtures thereof, separately from one another or together, if desired with the addition of acids or oxidants.

7. The use of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 [one of claims 1 to 4] for exothermic gas-phase reactions.

8. The use of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 [one of claims 1 to 4] for oxychlorination reactions.

9. The use of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 [one of claims 1 to 4] for the oxychlorination of ethylene to 1,2-dichloroethane.

10. A process for the preparation of 1,2-dichloroethane, which comprises reacting ethylene with hydrogen chloride and air or oxygen in the presence of a catalyst as claimed in claim 1 [one of claims 1 to 4] at a temperature of from 150 to 400°C and a pressure of from 1 to 10 bar.

11. The use of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 [one of claims 1 to 4] for partial oxidation reactions.

CLEAN CLAIMS OZ 51416

1. A catalyst for heterogeneously catalyzed reactions, which comprises active components and a catalyst support comprising amounts of $\delta\text{-A1}_2\text{O}_3$ which can be detected by X-ray diffractometry.

2. A catalyst for heterogeneously catalyzed reactions as claimed in claim 1, wherein the catalyst support comprises from 10 to 100% by weight of $\delta\text{-A1}_2\text{O}_3$.

3. A catalyst for heterogeneously catalyzed reactions as claimed in claim 1, wherein the active components employed are from 1 to 15% by weight of copper, from 0.1 to 6% by weight of alkali metals, from 0 to 5% by weight of alkaline earth metals, rare-earth metals or mixtures thereof.

4. A catalyst for heterogeneously catalyzed reactions as claimed in claim 1, prepared by impregnating a shaped $\delta\text{-A1}_2\text{O}_3$ -containing support having a BET surface area of from 80 to 250 g/m² with salts of copper, alkali metals and, if desired, alkaline earth metals, rare-earth metals or mixtures thereof.

5. A process for the preparation of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1, which comprises impregnating the $\delta\text{-A1}_2\text{O}_3$ -containing support with salts of copper, alkali metals and, if desired, alkaline earth metals, rare-earth metals or mixtures thereof, separately from one another or together, if

OZ 51416

desired with the addition of acids or oxidants.

6. A process for the preparation of a catalyst for heterogeneously catalyzed reactions as claimed in claim 5, wherein the salts employed are chlorides.

7. The use of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 for exothermic gas-phase reactions.

8. The use of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 for oxychlorination reactions.

9. The use of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 for the oxychlorination of ethylene to 1,2-dichloroethane.

10. A process for the preparation of 1,2-dichloroethane, which comprises reacting ethylene with hydrogen chloride and air or oxygen in the presence of a catalyst as claimed in claim 1 at a temperature of from 150 to 400°C and a pressure of from 1 to 10 bar.

11. The use of a catalyst for heterogeneously catalyzed reactions as claimed in claim 1 for partial oxidation reactions.